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Comments for the U.S. Department of Energy hearing on the Yucca Mountain Draft Environmental Impact Statement - at the St. Louis Convention Center. 1/20/00.

My name is Kay Drey. Twenty-five years ago, when I made my first public speech on nuclear power, I knew I was an opponent, but I didn't really know why. During the interim 25 years of reading documents, asking questions and doing a lot of thinking, I've become more and more opposed. The more I learn, the more amazed I become -- and, I guess, angry -- that this technology continues to exist and, in some desperately poor countries, continues to be promoted. By contrast, one remarkable bit of hope is that it has been 26 years since a nuclear power plant order was placed in the United States that was not subsequently canceled -- 26 years with no new viable order of a nuclear plant in America.

1 I realize that the hearing today is not supposed to be about nuclear power -- but it is about nuclear power. The wastes that the Department of Energy wants to ship through our communities out to Western Shoshone and (Skull Valley) Goshute lands would predominantly come from 103 operating nuclear reactors (plus decommissioned ones) -- reactors like Callaway, here in Missouri. The U.S. Congress and the Missouri legislature and related government agencies allowed the Callaway reactor -- 100 miles upwind from St. Louis and 80 river miles upstream -- to begin creating high-level radioactive waste (that is, irradiated fuel rods) and so-called "low-level" wastes in 1984, knowing -- knowing -- that no technology and no location existed to protect the biosphere from those permanently radioactive materials. We in St. Louis use the Callaway electricity, so we in St. Louis are morally responsible for the wastes that Callaway is generating.

2 ... No one has figured out how to keep the Callaway wastes or any others isolated for the necessary millennia -- isolated from the air, water, land, and living creatures. No one knows today -- and no one may ever know.

Why, then, won't some important state or national leader, or tenured physics professor, or electric utility executive pronounce publicly: "enough is enough!"

3 ... Many, many Americans believe that no more wastes should be generated until we figure out what to do with the wastes we already have -- the wastes we have been stockpiling and shipping from place, to place, to place -- since April 24, 1942. That's when experiments first began -- one mile from this Convention Center -- to purify the uranium for the world's first self-sustaining nuclear chain reaction. We here in St. Louis generated the first radioactive wastes of the Atomic Age. Those wastes are still strewn throughout our metropolitan area and elsewhere. And, as we all know, there really is no safe solution -- even for the first cupful.

These public hearings that the DOE has been required to stage, under the National Environmental Policy Act, do give a few brave souls the opportunity to speak about their concerns. But many people are timid about speaking on issues that seem

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to require technical knowledge. I believe, however, that these are moral questions, more than technical ones. Everyone has, or should have an opinion, as to whether continuing to create permanently radioactive poisons is good or bad for today's world and for the future.

I assume that those members of Congress who approved the first Nuclear Waste Policy Act, in 1982, believed what their generous electric utility contributors had told them: that "radioactive waste is just a political problem, not a technical one" -- and that the waste could be safely transported on our roads and rails, and that a safe, permanent, disposal location could be found. They maybe even were told that only a few latent cancers would result.

The electric utility lobbyists maybe even believed all that. But many people had challenged those claims long before Congress voted -- and far more know today that radioactive waste is, of course, a political problem -- a not-in-my-backyard or not-on-my-highway problem -- but that it is also a technical problem.

2 cont. No nuclear nation has found a safe location on the planet where wastes could be kept isolated from the biosphere for the necessary eternity. And no transportation 4 campaign or shipping container has been designed that could guarantee to move all this lethal mess through America's towns, over our mountains, and across our rivers safely. No known way exists to destroy these wastes except to let them decay until the radioactivity within them dies. - - - - Each radionuclide decays and emits radiation at its own particular rate -- regardless of temperature, pressure or chemical environment -- and continues to do so no matter what is done to it -- a very long process for some radioactive materials. To quote from a lawsuit over twenty years ago: "There are presently no physical or chemical steps which render this waste less toxic, other than simply the passage of time." (end-quote).

Back in 1982, the U.S. Office of Technology Assessment described the national high-level waste problem as follows: "simply to load a single geologic repository fast enough to keep up with the projected rate of spent fuel generation in [the year] 2000, it could be necessary to package, lower into the repository, and emplace about one waste canister every hour, 24 hours a day, 365 days a year." (end-quote)

5 America's Congress needs to craft a new nuclear waste policy -- one that will honestly address the dangers, the unknowns, and the true costs -- the costs to the environment and to living creatures for as far into the future as anyone can imagine.

6 Kay Drey -- The Department of Energy has already spent billions of dollars trying to put a happy face on the nuclear waste problem, and specifically on the Yucca Mountain location -- so that electric utilities can continue generating nuclear power and nuclear waste.

As just one example of nuclear power's waste problem, I'd like to mention, briefly, tritium, my favorite radioisotope. It was back in 1977 when I first learned

about tritium -- or radioactive hydrogen -- and about how much tritium Union Electric was estimating it would create here in Missouri at the Callaway plant. I read that Union Electric and the U.S. Nuclear Regulatory Commission expected that the Callaway plant could quite possibly generate and release thousands of curies of tritium into the environment every year into the air and the Missouri River -- through pipes and vents -- as a part of the routine operation of the plant. It would not take an accident. So I phoned a health physicist at Oak Ridge National Laboratory in Tennessee, and asked him to tell me about tritium. He answered, "Tritium is no big deal. All it can do is destroy a DNA molecule." (end-quote) That was back in 1977, when construction of the Callaway plant had barely begun. Some of the radioactive tritium that Callaway is generating and releasing today will still be around in the environment 120 years from now. All it can do is destroy a DNA molecule.

How many Congressmen had been told about tritium when they voted in 1982 for the original Nuclear Waste Policy Act? How many had been told that every container
7 ... of high-level radioactive waste contains tritium -- and that radioactive and non-radioactive hydrogen is like Houdini -- it can and does escape easily.

My second favorite isotope is technetium-99, so I was sort of proud to find the following pronouncement in the Yucca Mountain Draft Environmental Statement: "For postclosure impacts, the repository performance assessment evaluated nine radionuclides (see Appendix I) and identified technetium-99 and neptunium-237 as the nuclides that provide the greatest impacts." (p. A-9)

Technetium-99 has a half-life of 211,000 years, which means that the amount that AmerenUE is generating -- right now -- at the Callaway plant will still be giving off radioactivity at least two million years from now (that is, ten half-lives from now). I brought one of my favorite documents along to make an important point:
7 cont. and that is, that scientists and health physicists and doctors have not yet learned everything they need to know about the hundreds of different man-made isotopes that are being created in nuclear power plants. I'll read just the title of this Oak Ridge report: "Assessment of Tc-99 Releases to the Atmosphere -- A Plea for Applied Research."

8 Nuclear power is dangerous, expensive, and dirty -- and its poisonous byproducts are permanent. Safe, renewable energy sources are already available. Accelerated federal funding should be invested toward the research, development, and production of every known alternative energy option -- and our many bright engineers and scientists should be subsidized to look for more energy alternatives. Nuclear 3 cont.
electric utilities should not be allowed to generate additional radioactive waste until someone, someday figures out what to do with what we already have. Enough is enough. #

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